

CLAIMS

We claim:

1. A system for controlled dispensing of a material onto an elongated window component comprising:

a) a nozzle for dispensing the material into contact with a surface of the elongated window component at a delivery site located along a path of travel of the elongated window component;

b) a conveyer for moving the elongated window component along the path of travel relative to the nozzle at a controlled speed;

c) a metering pump for delivering controlled amounts of the material to the nozzle;

d) a pressurized bulk supply for delivering the material to an inlet to the metering pump; and,

e) a controller for regulating the speed of the metering pump to control the flow rate of the material dispensed by the nozzle.

2. The system of claim 1 further comprising a pressure transducer for monitoring the pressure of the material before said material is dispensed from the nozzle.

3. The system of claim 2 wherein said controller regulates the pressure of the material delivered to the metering pump from the bulk supply based on the pressure sensed by the pressure transducer.

4. The system of claim 1 wherein the pressure transducer is positioned for monitoring pressure on an inlet side of the metering pump and wherein said controller includes an output coupled to the bulk supply for adjusting the pressure of said material to minimize a pressure drop between an inlet and an outlet of said metering pump,

5. The system of claim 1 wherein the window component is a generally U shaped spacer frame member and wherein there are first and second nozzles, the first nozzle being adapted to dispense a desiccant into an interior of the spacer frame and the second nozzle for delivery of an adhesive onto an outer surface of the spacer frame.

6. The system of claim 1 wherein the window component has a substantially closed rectangular shape.

7. The system of claim 5 wherein there are multiple nozzles for delivering adhesive to outer sides of said U shaped spacer frame.

8. The system of claim 1 wherein first and second materials are applied to a side of said elongated window component.

9. The system of claim 8 wherein said first and second materials are applied simultaneously.

10. The system of claim 8 wherein said first and second materials are blended as they are dispensed.

11. The system of claim 1 wherein the metering pump is a gear pump.

12. The system of claim 1 additionally comprising an optical sensor for monitoring movement of said elongated window component and wherein the sensor is coupled to the controller to initiate dispensing of material through the nozzle onto the elongated component at an appropriate time based on sensed movement of the elongated window component.

13. The system of claim 12 wherein the elongated window component is a spacer frame member having a gas bleed hole at a location along an elongated extent of the spacer frame and wherein the controller and optical sensor sense a presence of the gas bleed hole and stop material dispensing in a region of the gas bleed hole as the spacer frame moves along the travel path.

14. The system of claim 1 wherein the controller includes a computer interface to allow a user to program parameters relating to a dispensing of the material onto the elongated window component.

15. The system of claim 14 wherein one of said parameters is a width of the elongated window component and wherein the controller responds to an entering of a width parameter by adjusting the controlled amounts delivered by the metering pump

16. A method of controlled dispensing of a material along a length of an elongated window component comprising:

- a) moving an elongated window component along the path of travel relative to a material dispensing nozzle at a controlled speed;
- b) delivering the material from a bulk supply to an inlet of a metering pump having an outlet coupled to the nozzle to dispense the material from the nozzle into contact with a surface of the elongated window component; and
- c) regulating the speed of the metering pump to control the rate of flow of the dispensed material from the nozzle.

17. The method of claim 16 further comprising monitoring the pressure of the material with a pressure transducer before said material is dispensed from the nozzle.

18. The method of claim 17 further comprising regulating the pressure of the material delivered to the metering pump based on the pressure sensed by the pressure transducer.

19. The method of claim 16 additionally comprising periodically stopping dispensing of material from the nozzle as a plurality of elongated window components move along the path of travel past the nozzle.

20. The method of claim 19 wherein the elongated window component is a U shaped spacer frame including an opening along its length and stopping the dispensing leaves the opening uncovered as the spacer frame passes the nozzle.

21. The method of claim 16 additionally comprising presenting a user interface which allows the user to adjust input parameters for dispensing material from the nozzle.

22. The method of claim 21 wherein the window component is a U shaped spacer frame and wherein an input parameter is a width of said spacer frame.

23. The method of claim 16 wherein regulating the pressure is performed to minimize differences in pressure across the metering pump.

24. The method of claim 16 wherein monitoring comprises monitoring pressure on an inlet side of the metering pump.

25. The method of claim 16 wherein the speed of the metering pump is dependent on the speed of a conveyor.

26. The method of claim 16 wherein the speed of the metering pump is dependent on a type of elongated window component being processed.

27. The method of claim 16 wherein the speed of the metering pump is dependent on a desired material thickness.

28. The method of claim 16 wherein the speed of the metering pump is dependent on a spacer width.

29. The method of claim 21 wherein the input parameters include acceleration and deceleration of the metering pump.

30. A system for controlled dispensing of a material onto an elongated window component comprising:

5 a) a nozzle for dispensing the material into contact with a surface of the elongated window component at a delivery site located along a path of travel of the elongated window component;

b) a conveyer for moving the elongated window component along the path of travel relative to the nozzle at a controlled speed;

10 c) a metering pump for delivering controlled amounts of the material to the nozzle;

d) a pressurized bulk supply for delivering the material to an inlet to the metering pump;

e) a pressure transducer for monitoring the pressure of the material before said material is dispensed from the nozzle; and

15 f) a controller for regulating the pressure of the material delivered to the metering pump from at least one bulk supply based on a pressure sensed by the

pressure transducer.

31. The system of claim 30 wherein the controller includes a computer interface to allow a user to input program parameters relating to a dispensing of the material onto the elongated window component.